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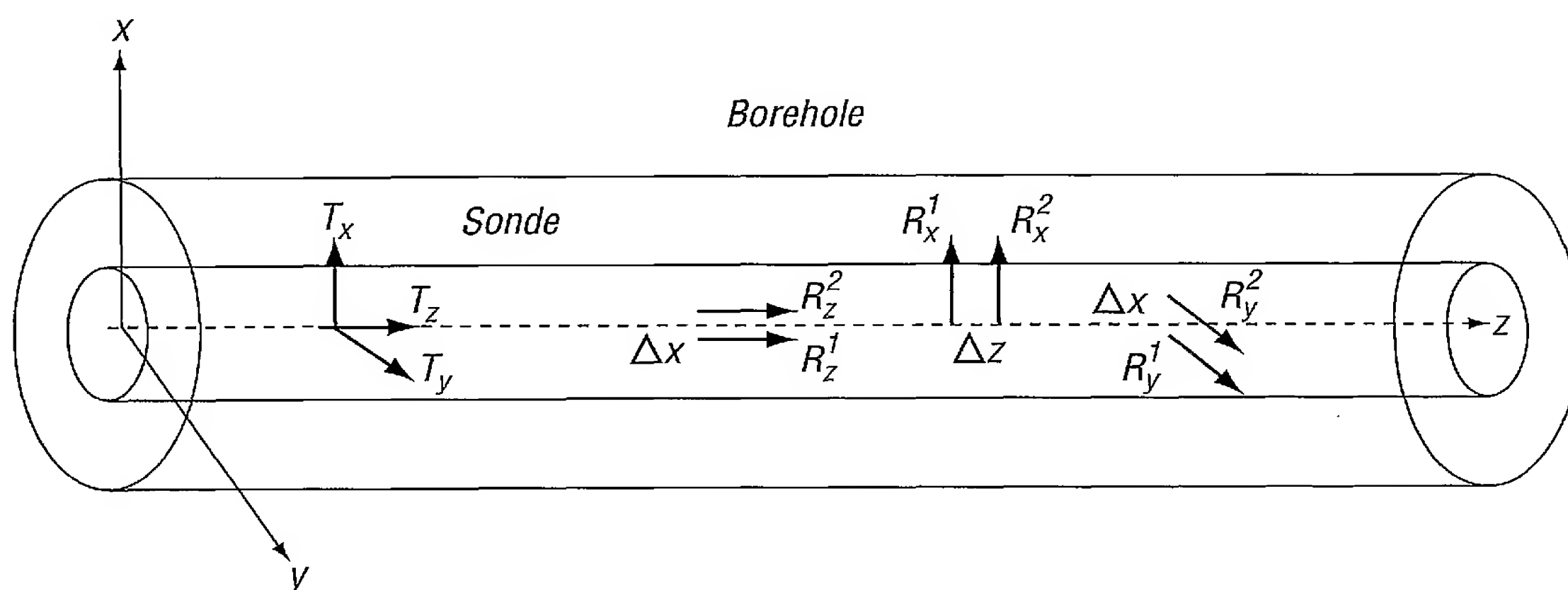
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(54) Title: METHOD AND APPARATUS FOR GRADIENT ELECTROMAGNETIC INDUCTION WELL LOGGING



(57) Abstract: The method and apparatus for determining the conductivity of anisotropic formations surrounding a borehole. The method comprises measuring the gradient of the magnetic field by an electromagnetic logging tool in a borehole in the subsurface formation. The instrument comprises one or several closely positioned parallel receiver coils and one or several closely positioned parallel transmitter coils with the magnetic moment direction of the transmitter coils parallel or different from the magnetic moment direction of the receiver coils. In a preferred embodiment a gradient induction instrument consists of a tri-axial transmitter array and up to 27 pairs of receiver coils, measuring some or all magnetic gradient components: formula (I).

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